

AD \_\_\_\_\_

Award Number: DAMD17-99-1-9245

TITLE: Research Training in Biopsychosocial Breast Cancer  
Research

PRINCIPAL INVESTIGATOR: Michael Andrykowski, Ph.D.

CONTRACTING ORGANIZATION: University of Kentucky  
Research Foundation  
Lexington, Kentucky 40506

REPORT DATE: July 2000

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command  
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;  
Distribution Unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

20010110 080

BTIC QUALITY INSPECTED 3

**REPORT DOCUMENTATION PAGE**Form Approved  
OMB No. 074-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503

<b>1. AGENCY USE ONLY (Leave blank)</b>		<b>2. REPORT DATE</b> July 2000	<b>3. REPORT TYPE AND DATES COVERED</b> Annual (1 Jul 99 - 30 Jun 00)	
<b>4. TITLE AND SUBTITLE</b> Research Training in Biopsychosocial Breast Cancer Research			<b>5. FUNDING NUMBERS</b> DAMD17-99-1-9245	
<b>6. AUTHOR(S)</b> Michael Andrykowski, Ph.D.				
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> University of Kentucky Research Foundation Lexington, Kentucky 40506  <b>E-MAIL:</b> mandry@pop.uky.edu			<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>	
<b>9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b>  U.S. Army Medical Research and Materiel Command Fort Detrick, Maryland 21702-5012			<b>10. SPONSORING / MONITORING AGENCY REPORT NUMBER</b>	
<b>11. SUPPLEMENTARY NOTES</b>				
<b>12a. DISTRIBUTION / AVAILABILITY STATEMENT</b> Approved for public release; distribution unlimited				<b>12b. DISTRIBUTION CODE</b>
<b>13. ABSTRACT (Maximum 200 Words)</b>  This report summarizes activities and accomplishments during the first year of a four year predoctoral and postdoctoral research training program in biopsychosocial aspects of breast cancer. Two predoctoral trainees were appointed during the initial year of the training program. Research training was provided by a multidisciplinary faculty of six. The training program consists of five integrated components. These include: (1) training in research design, methods, and analysis through supervised participation in BC-related research; (2) formal coursework; (3) individual tutorial in BC-related research; (4) participation in a monthly BC seminar; and (5) education regarding biological and medical aspects of BC. Each of these components was effectively implemented during the initial year of the training program. In general, the training program requires trainees to participate in all phases of the research enterprise including protocol development, obtaining approval for use of human subjects, data collection, data preparation, entry, and analysis, and manuscript preparation. Two new predoctoral trainees and a postdoctoral trainee were recruited and were appointed to the training program for the second project year.				
<b>14. SUBJECT TERMS</b> Breast Cancer, Training, Research, Behavioral Science				<b>15. NUMBER OF PAGES</b> 13
				<b>16. PRICE CODE</b>
<b>17. SECURITY CLASSIFICATION OF REPORT</b> Unclassified	<b>18. SECURITY CLASSIFICATION OF THIS PAGE</b> Unclassified	<b>19. SECURITY CLASSIFICATION OF ABSTRACT</b> Unclassified	<b>20. LIMITATION OF ABSTRACT</b> Unlimited	

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)  
Prescribed by ANSI Std. Z39-18  
298-102

## FOREWORD

Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the U.S. Army.

\_\_\_ Where copyrighted material is quoted, permission has been obtained to use such material.

\_\_\_ Where material from documents designated for limited distribution is quoted, permission has been obtained to use the material.

\_\_\_ Citations of commercial organizations and trade names in this report do not constitute an official Department of Army endorsement or approval of the products or services of these organizations.

N/A In conducting research using animals, the investigator(s) adhered to the "Guide for the Care and Use of Laboratory Animals," prepared by the Committee on Care and use of Laboratory Animals of the Institute of Laboratory Resources, national Research Council (NIH Publication No. 86-23, Revised 1985).

N/A For the protection of human subjects, the investigator(s) adhered to policies of applicable Federal Law 45 CFR 46.

N/A In conducting research utilizing recombinant DNA technology, the investigator(s) adhered to current guidelines promulgated by the National Institutes of Health.

N/A In the conduct of research utilizing recombinant DNA, the investigator(s) adhered to the NIH Guidelines for Research Involving Recombinant DNA Molecules.

N/A In the conduct of research involving hazardous organisms, the investigator(s) adhered to the CDC-NIH Guide for Biosafety in Microbiological and Biomedical Laboratories.

Michael Andrew Paul - 7/20/00  
PI - Signature Date

## Table of Contents

<b>Cover</b> .....	1
<b>SF 298</b> .....	2
<b>Foreword</b> .....	3
<b>Table of Contents</b> .....	4
<b>Introduction</b> .....	5
<b>Body</b> .....	5
<b>Key Research Accomplishments</b> .....	9
<b>Reportable Outcomes</b> .....	9
<b>Conclusions</b> .....	10
<b>References</b> .....	10
<b>Appendices</b> .....	10

## **Introduction**

High quality research investigating various psychosocial and behavioral aspects of breast cancer has the potential to reduce breast cancer-related mortality as well as improve quality of life following breast cancer (BC). Critical to the performance of high quality research in this area is the recruitment and training of new researchers. This report summarizes activities and accomplishments during the first year of a four year research training program in biopsychosocial aspects of (BC). The training program is centered in the Department of Behavioral Science, a basic science department in the University of Kentucky College of Medicine. A multidisciplinary training faculty of six is drawn from three academic units within the College of Medicine (Behavioral Science, Medicine-Hematology/Oncology, and Nursing). Funding is provided to support the research training of two predoctoral trainees and one postdoctoral trainee each year. Trainees engage in a variety of supervised research, experiential, and didactic activities under the supervision of training program faculty.

## **Body**

The research training program was initiated on July 1, 1999. Following is a summary of activities associated with each of the first year project tasks outlined in the approved Statement of Work.

### Task 1: Initial Recruitment of Research Trainees

In the late spring of 1999, applications were solicited from individuals interested in the predoctoral research training program. Flyers announcing the availability of the predoctoral training positions were distributed in the mailboxes of currently enrolled graduate students in degree programs in the academic disciplines of nursing, psychology, anthropology, sociology, educational and counseling psychology, and communications. Announcements of the availability of the two predoctoral training positions were also forwarded to the Directors of Graduate Studies in each of these academic disciplines.

A total of seven applications were received. Applicants represented three different academic disciplines: Psychology, Nursing, and Sociology. The seven applications were reviewed by training program faculty with emphasis upon prior academic accomplishments and potential for future research success. Two applicants were selected by consensus of the training faculty and were offered predoctoral traineeships. Both applicants accepted and were appointed to one year terms as predoctoral trainees effective July 1, 1999.

Both of the predoctoral trainees appointed during the first year already possessed Masters degrees in their respective fields and were pursuing doctoral studies in the Graduate School at the University of Kentucky. Both of the predoctoral trainees during the first project year also possessed some previous research and clinical experience in oncology settings. Wendy Mager, M.S., was beginning her doctoral studies in Clinical Psychology. The other trainee, Jamie Studts was completing his doctoral studies in Clinical Psychology.

In August of 1999, we began to solicit applications from individuals interested in the postdoctoral research training program. A variety of recruitment strategies were employed. First, flyers announcing the availability of the single postdoctoral training position were distributed to mailboxes of currently enrolled graduate students in degree programs in the academic disciplines of nursing, psychology, anthropology, sociology, educational and counseling psychology, and communications. Announcements of the availability of the one postdoctoral training position was also forwarded to the Directors of Graduate Studies in each of these academic disciplines. Second, letters were sent to current investigators in the field announcing the availability of the postdoctoral training position and asking them to pass this information along to potential applicants. Names of current investigators in the field were identified through perusal of annual programs of meetings conducted by various professional organizations including the American Sociological Association, American Anthropological Association, Society of Behavioral Medicine, Oncology Nursing Society. Third, flyers were posted at several national conferences announcing the availability of the postdoctoral training position. These included the annual meetings of the American Psychological Association, Society of Behavioral Medicine, and the Oncology Nursing Society. Finally, formal announcements of the availability of the postdoctoral training position were published in several print and electronic outlets. Specifically, we published notices of the position availability in the American Psychological Association Monitor, and the quarterly bulletins published by the Society of Behavioral Medicine and Division 38 (Health Psychology) of the American Psychological Association. Notices of position availability were also posted on several internet web sites which serve as placement services for various professional organizations including the Medical Sociology group of the American Sociological Association and the History and Humanities placement site for the H-NET academic placement service.

A total of nine individuals responded to the postdoctoral recruitment notice resulting in the receipt of six completed applications (CV, cover letter, academic references). Applicants represented four different disciplines including communications, history, psychology, and sociology. The six applications were reviewed by training program faculty with emphasis upon prior academic accomplishments and potential for future research success. One applicant was selected by consensus of the training faculty and was formally offered the postdoctoral position. This applicant declined the offer, however, and accepted an offer for a similar postdoctoral research training position at the University of Texas Health Sciences Center. (The opportunity to receive a significantly larger stipend was cited as the primary reason for declining our offer.)

The search for a suitable postdoctoral trainee candidate was reopened and another suitable candidate was identified. This individual was offered the training position in April, 2000 and accepted. Abbie Beacham is completing her doctoral studies in clinical psychology at the University of Louisville and has recently completed a predoctoral clinical internship at the University of Florida Health Sciences Center. She will begin her training on September 1, 2000.

## Task 2: Implementation of Training Program

The training program consists of five basic components: (1) training in research design, methods, and analysis through supervised participation in BC-related research; (2) formal coursework; (3) individual tutorial in BC-related research; (4) participation in a monthly BC seminar; and (5) education regarding biological and medical aspects of BC. Each of these components was effectively implemented during the initial year of the training program.

Predoctoral trainees in the program are required to complete two specific graduate level courses (component #2 from above). These include a course in "Psychosocial Oncology" and a course in "Integrated Research Methods." Both predoctoral trainees had completed each of these courses prior to appointment to the training grant.

A monthly BC seminar involving both trainees and training program faculty was established (component #4 from above). Other faculty and graduate students interested in biopsychosocial BC research were also invited to attend on an ad hoc basis. This monthly seminar lasted for roughly 75-90 minutes each month. This seminar provided: (a) an opportunity for all members of the training program to keep abreast of the research activities of the trainees; (b) a forum for training faculty and trainees to discuss recent and ongoing research in biopsychosocial aspects of BC; (c) an opportunity for faculty and trainees to discuss ideas leading to the development of new BC-related research projects at the University of Kentucky; and (d) an opportunity for didactic instruction regarding medical and clinical aspects of BC.

Education regarding biological and medical aspects of BC was provided through both didactic instruction and experiential activities (component #5 from above). The monthly seminar provided an opportunity for trainees (and program faculty) to learn basic medical information regarding BC. A series of four didactic lectures were presented which provided an overview of the following general topics: epidemiology, detection, diagnosis and staging, treatment, and BC genetics. Lectures were given by the two members of the training program faculty possessing M.D. degrees, Drs. Munn and Wadhwa. Each lecture lasted 60-75 minutes. In addition, all trainees participated in various experiential activities. These included attendance at several of the weekly integrative patient conferences conducted by the University of Kentucky Comprehensive Breast Care Center as well as "shadowing" of clinicians and BC patients as they are involved in the provision and receipt of medical treatment of BC.

During the first year of the training program, research trainees were actively involved in specific research projects under the supervision of training program faculty (component #1 from above). Research projects were either "communal" projects in which all trainees participated or were "individual" research projects which were developed and implemented largely by a single trainee. During the initial year of the training program, communal research projects included: (a) a longitudinal study of women's psychological and behavioral responses to the experience of a benign breast biopsy; (b) a comparison of emotional expressivity in BC survivors and age- and education-matched women without a history of breast cancer; and (c) a prospective and longitudinal study of fatigue during and following treatment for breast cancer. Trainee involvement in these communal



research projects ranged across all phases of the research enterprise including research protocol development, preparation of requests for approval for use of human subjects, data collection, data preparation, entry, and analysis, and finally manuscript preparation.

In addition to the communal research projects cited above, all trainees developed and implemented their own BC-related research project. These projects were developed under the specific supervision of one or two members of the training program faculty (component #3 from above). Wendy Mager's project involved an examination of women's experiences at the time they were told they had BC and how this might be related to subsequent psychological adjustment. In particular, her research examined how experiences during the "diagnostic interview" might be associated with subsequent likelihood of symptoms of posttraumatic stress disorder. Jamie Studts' project involved an examination of four different methods of assessing cancer risk perceptions. Both reliability and validity were examined across these four methods. This "head-to-head" comparison will hopefully result in some consensus regarding what specific measures of cancer risk perceptions might work best under what specific conditions. In both research projects, trainees assumed full responsibility for all aspects of development and implementation, thus providing them with supervised experience in all aspects of the research endeavor.

### Task 3: Recruitment of Research Trainees for Project Year 2

Jamie Studts, M.S., completed his doctoral studies and left to begin a predoctoral clinical internship at Duke University Medical Center. Wendy Mager, M.S. has decided to pursue an interest in child and adolescent health psychology and as a result was not eligible for reappointment to a second year of predoctoral research training support. As a result, it was necessary to recruit two new predoctoral research trainees to be appointed for the second year of the training program. Availability of two predoctoral research trainee positions was again advertised throughout both the medical center and main campuses at the University of Kentucky. A total of 6 completed applications were received. These 6 applications encompassed three different disciplines including communications, anthropology, psychology. Applications were reviewed by the training program faculty with emphasis upon prior academic accomplishments and potential for research success. Following this review two individuals were offered training positions for the second year of the training program. Both John Schmidt, a doctoral candidate in Clinical Psychology, and Julie Bollmer, a doctoral candidate in Social Psychology accepted these offers of appointment. They began their appointments on July 1, 2000.

Efforts to recruit a postdoctoral research trainee which were ongoing during the entire first year of the training program were finally fruitful. A suitable candidate was identified and was offered an appointment to a postdoctoral training position for the second year of the training program. Abbie Beacham, Ph.D., has completed her doctoral studies in clinical psychology at the University of Louisville and recently completed her predoctoral internship in clinical health psychology at the University of Florida Center for Health Sciences. She possesses a strong background in clinical health psychology, with specific expertise in exercise physiology. Her participation in the training program should nicely balance the more psychosocial backgrounds of the two predoctoral trainees appointed for the second year of the training program.



## **Key Research Accomplishments**

- Hiring and training of two predoctoral trainees during project year one
- Hiring of two new predoctoral trainees for project year two
- Hiring of postdoctoral trainee for project year two
- Preparation of two manuscripts based upon research conducted in association with training grant
- Presentation of two abstracts at professional meeting based upon research conducted in association with training grant.
- Successful implementation of all five components of training program

## **Reportable Outcomes**

### Manuscripts submitted for editorial review:

Mager, W.M., & Andrykowski, M.A. (2000). Communication in the cancer "bad news" consultation: Patient perceptions and psychological adjustment. (Submitted to Psychooncology)

Andrykowski, M.A., Carpenter, J.S., Studts, J.L., Cordova, M.J., Cunningham, L.J., Mager, W.M., Sloan, D., Kenady, D., & McGrath, P. (2000). Adherence to recommendations for clinical follow-up after benign breast biopsy. (Submitted to Cancer)

### Abstracts presented at professional conferences:

Mager, W.M., & Andrykowski, M.A. (2000, April) Predicting Cancer-Related PTSD Symptoms From Physician Communication Behavior During the "Bad News" Consultation. Abstract presented at the Annual Meeting of the Society of Behavioral Medicine, Nashville, TN.

Studts, J.L., Andrykowski, M.A., & Carpenter, J.S. (2000, April) Cancer Screening Adherence Following Benign Breast Biopsy. Abstract presented at the Annual Meeting of the Society of Behavioral Medicine, Nashville, TN.

### Employment opportunities received based on training supported by award:

Jamie Studts, M.S., a predoctoral trainee during project year one, was appointed to a one year predoctoral clinical internship at the Duke University Medical Center effective July 1, 2000.

## Conclusions

Each of the five components of the research training program was effectively implemented during the first year of the training program. Both predoctoral trainees received supervised, "hands on" experience in all aspects of conducting biopsychosocial breast cancer-related research. In addition, both trainees had the opportunity to participate in a variety of specific research projects, thus increasing the breadth of their experience. Finally, both trainees had the opportunity for extensive interaction with both patients and health providers in the breast cancer care setting. Addition of a postdoctoral trainee (Dr. Beacham) during the second year of the training program should enhance the training experience for the predoctoral trainees as it will allow exposure to additional research opportunities.

The failure to recruit a suitable postdoctoral trainee during the first year of the training program was unfortunate. It is believed that this was due in some part to the lateness with which recruiting for this position began. Generally, recruiting is best during the winter and spring for an upcoming academic year. Funding for the program did not begin until July 1, 1999 and this hampered recruitment of a suitable trainee for the first year of the training program. The failure to recruit a suitable trainee was also likely due in some part to the size of the stipend available. A total stipend of only \$25,000 was budgeted (including the \$4000 supplement provided by the University of Kentucky) for year one of the project. This is noncompetitive with current NIH postdoctoral stipend levels which are presently in the \$28,000 to \$29,000 range for an individual with less than one year postdoctoral experience. One excellent postdoctoral candidate who was quite interested in the training program ultimately rejected our offer to accept a similar postdoctoral research training position at the University of Texas Health Science Center. The stipend associated with this postdoctoral research training position was in the \$34,000 range.

## References

None

## Appendix

No publications have resulted from training program activities at the time of this writing. However, two manuscripts based upon research related to the training program are presently under editorial review. Should these manuscripts be accepted for publication, copies will be included in future annual reports. One of these manuscripts has a predoctoral trainee (Mager) as the primary author. The other includes both predoctoral trainees as contributing authors. These two manuscripts are:

Mager, W.M., & Andrykowski, M.A. (2000). Communication in the cancer "bad news" consultation: Patient perceptions and psychological adjustment. (Submitted to Psychooncology)

Andrykowski, M.A., Carpenter, J.S., Studts, J.L., Cordova, M.J., Cunningham, L.J., Mager, W.M., Sloan, D., Kenady, D., & McGrath, P. (2000). Adherence to recommendations for clinical follow-up after benign breast biopsy. (Submitted to Cancer)

Two research abstracts have resulted directly from training program research activities at this point in time. Both of these abstracts were prepared by program trainees and were presented at the annual meeting of the Society of Behavioral Medicine held in April, 2000 in Nashville, Tennessee. Copies of these abstracts have been furnished in the appendix. These abstracts are:

Mager, W.M., & Andrykowski, M.A. (2000, April) Predicting Cancer-Related PTSD Symptoms From Physician Communication Behavior During the "Bad News" Consultation. Abstract presented at the Annual Meeting of the Society of Behavioral Medicine, Nashville, TN.

Studts, J.L., Andrykowski, M.A., & Carpenter, J.S. (2000, April) Cancer Screening Adherence Following Benign Breast Biopsy. Abstract presented at the Annual Meeting of the Society of Behavioral Medicine, Nashville, TN.

## PREDICTING CANCER-RELATED PTSD SYMPTOMS FROM PHYSICIAN COMMUNICATION BEHAVIOR DURING THE "BAD NEWS" CONSULTATION

Wendy M. Mager, M.S., and Michael A. Andrykowski, Ph.D., Department of Behavioral Science, University of Kentucky College of Medicine.

The purpose of this study was to explore relationships between breast cancer survivors' communication experiences during the diagnostic consultation and their subsequent development of cancer-related PTSD symptoms. Sixty women ( $M$  age = 53) who had been diagnosed with early-stage breast cancer (87% Stages 0-II) an average of 28 months prior to study were interviewed by telephone. Measures included: Cancer Diagnostic Interview Scale (CDIS), Posttraumatic Stress Disorder Checklist - Civilian Version (PCL-C), Duke-UNC Functional Social Support Questionnaire, and ad-hoc items regarding patients' memory for, and satisfaction with, the diagnostic consultation. Multiple regression analysis showed that physicians' communication behavior during the diagnostic consultation ( $B = -.27$ ,  $p < .05$ ), income ( $B = -.43$ ,  $p < .01$ ), and time since diagnosis ( $B = -.29$ ,  $p < .05$ ) were significant predictors of current cancer-related PTSD symptoms. Disease stage, age, and social support were not significant predictors. Univariate analyses using CDIS subscales showed that perceptions of more positive physician interpersonal behavior during the diagnostic consultation were significantly related to fewer PTSD symptoms. Specifically, women reporting higher scores on "physician caring" ( $r = -.32$ ,  $p < .05$ ) and "physician understanding" ( $r = -.28$ ,  $p < .05$ ) subscales evidenced fewer PTSD symptoms. Scores on the "physician technical competence" subscale were not significantly linked to PTSD symptom reports ( $r = -.22$ , n.s.). Memory for, and satisfaction with, the diagnostic consultation were not associated with PTSD scores ( $r$ 's  $< .05$ , n.s.). However, better physician communication during the diagnostic consultation was highly correlated with patients' satisfaction with the interaction ( $r = .77$ ,  $p < .01$ ). Findings suggest that physicians' communication behavior during the diagnostic consultation, especially interpersonal aspects, may influence how women process the trauma of breast cancer.

CORRESPONDING AUTHOR: Wendy M. Mager, M.S., Department of Behavioral Science, University of Kentucky, Lexington, Kentucky, 40536-0086.

## CANCER SCREENING ADHERENCE FOLLOWING BENIGN BREAST BIOPSY

Jamie L. Studts, M.S., Michael A. Andrykowski, Ph.D., Department of Behavioral Science, University of Kentucky College of Medicine, and Janet S. Carpenter, RN, Ph.D., Vanderbilt University School of Nursing.

Participation in cancer screening and diagnostic procedures can have a marked psychological and behavioral impact even when no malignancy is detected. The purpose of this study was to explore cancer screening adherence rates following benign breast biopsy (BB) and to identify factors that predict cancer screening. Women (n=103) receiving a benign result after diagnostic BB completed three telephone interviews. The initial interview was completed within one month of BB with follow-up interviews at 4 and 8 months. At each interview, women completed measures of breast cancer (BC) risk perception and general and BC-specific distress. Information coping style and optimism were assessed at the initial interview. Additionally, a medical record review was conducted one year following BB to assess cancer screening adherence. Participants were predominantly married, Caucasian, and employed. Mean age and years of education were 45.4 (SD=13.6) and 13.6 (SD=2.9) years, respectively. Of the 103 participants, 62 (60%) were adherent to clinical breast examination (CBE) recommendations and 50 of 72 (69%) were adherent to mammography screening recommendations. Many sociodemographic and psychological measures significantly differentiated between adherents and nonadherents, including age, income, education, depressive symptoms, BC-specific distress, and perceived BC risk. However, logistic regression revealed that only older age at BB and greater income independently predicted adherence to CBE and mammography recommendations. Consistent with previous cancer screening research, younger women with fewer financial resources appear to be at-risk for non-adherence following benign BB. These women are likely to report significantly more psychological distress and require intervention to promote adherence to cancer screening.

CORRESPONDING AUTHOR: Jamie L. Studts, M.S., Department of Behavioral Science, University of Kentucky College of Medicine, Lexington, KY 40536-0086.